

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE

Medicine Lake National Wildlife Refuge
Medicine Lake, Montana
February 4, 1953

(1-R)

1953

WATER MANAGEMENT PLAN

GENERAL

The calendar year of 1952 was another exceedingly "dry" year, with a total precipitation of only 8.56 inches. Only once in the past fifteen years has this area received less moisture, and the present situation is made more serious because of the fact that 1951 records showed another sub-normal precipitation reading of only 9.24 inches. Most pools were from one to two feet low at freezeup time.

The new year is not showing any sign of improvement, so far, since January of 1953 brought only .60 inches of moisture. Therefore, present indications do not offer much hope for a heavy spring run-off. The ground is very dry and is not frozen to any great extent. However, much can happen to change the picture before the nesting season arrives. Last year there was scarcely any local run-off, but the Big Muddy Creek brought record floodwaters down from the Canadian border in April.

Contracts will soon be awarded for the construction of a new spillway at the Homestead Unit to replace the old rubble-masonry structure which has caused so much trouble in recent years. This construction will require holding the water in the Homestead pools at a low stage, if possible, for the early part of the summer.

In order to provide sufficient water to raise the Homestead Unit level after construction is completed, it will be necessary to store a little extra water in Medicine Lake above the No. 4 structure, if sufficient water can be found.

In view of the unpredictable situation regarding run-off it is going to be difficult to establish desirable water levels for all the impoundments of the Refuge with any great certainty of fulfillment, and it is our belief that local conditions and problems will have to be met and solved according to the ability of the refuge staff to take advantage of every opportunity to conserve any available run-off water with due regard for wildlife, livestock and aquatic plant needs for the summer and fall.

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Revised & increased

With these conditions in mind, we are recommending that the levels approved for 1952 be used as a guide for this year's water management, with the exception that all possible water be stored in Medicine Lake (Unit No. 4), until the refilling of the Homestead pools has been completed. For the balance of the season and especially for the fall months of October and November, efforts will be made to maintain sufficiently high levels in the Homestead Unit to provide maximum utilization of the area by migrating waterfowl. This will be accomplished by releasing water from Medicine Lake as needed, as was done through the summer and fall of 1952. A leaking gate in the No. 6 structure has been repaired this winter, and it is believed that a desirable level can be maintained in the Homestead Unit this summer without taking as much water out of Medicine Lake, as was necessary during the past summer.

With the experience gained in the 1952 management of water levels we feel that we are in a better position to cope with the water problem than during our first year here. The uniformly good results obtained from adherence to the 1952 plan showed that it was basically sound, and with the exceptions noted above, we submit the following recommendations for 1953:

Unit	Spill Level	Present Elevation	Proposed Max. 1953 Levels
Katy's Lake	No Spillway	Below Gauge	1953.00
No. 4 (Med. Lake)	1943.02	1940.60	1943.00
No. 6 (Homestead)	1937.85	1937.29	1937.85
No. 10	1945.50	1943.40	1945.50
No. 11	1952.54	1950.70	1952.54
No. 12	1955.93	1953.20	1954.00

DETAILS

KATY'S LAKE

Although no water was permitted to flow through the inlet structure during the spring of 1952, and in spite of heavy evaporation this shallow lake maintained a higher level than in 1951, and produced a bumper crop of waterfowl and aquatic food. No indications of botulism could be found and the unit seems to be thriving under current management plans.

NO. 4 UNIT (Medicine Lake)

Management of water in Medicine Lake has been mentioned earlier and it is believed that there is little need for further discussion. The 1952 drawdown exposed some of the mud flats at the upper end of the lake near the mouth of Lake Creek, but this only happened late in the fall, so no undesirable effects were noticeable.

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NO. 6 UNIT (Homestead)

Plans for the new spillway in the Homestead Unit call for the installation of a control gate in the structure which will permit better water management. Aquatic growth was good last year and a great number of waterfowl were produced on the area. Fall use by migrating waterfowl was very light, as was the case throughout this part of the state.

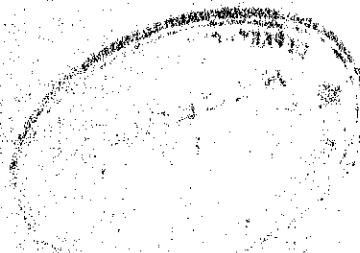
NO'S 10, 11 & 12 UNITS

These upstream units can probably be filled by spring runoff and are fairly easy to hold at nearly constant levels. They are very valuable nesting and brooding areas and we feel that they should be held at points near their spill levels to best provide food and cover growths for young birds. Lowering these pools for the purpose of maintaining surface levels in Unit No. 4, (Medicine Lake) would not be practical, in our opinion, since the total storage capacity of these units would have little effect on the vastly larger Medicine Lake. They are also valuable for maintaining proper levels in the other water and marsh areas near Gaffney's Lake, just east of Medicine Lake.

SUMMARY

In view of the present shortage of water, it is felt that extra precautions should be taken to avoid unnecessary loss of any water that may possibly be held for proper level maintenance later in the summer. Of course, due regard must be given to the need for avoiding extra strain on control structures and dikes and the Medicine Lake City well situation. Close watch will be kept on water levels and effects of management practices.

Submitted February 3, 1953.


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